



GUIDELINE FOR THE COMPILATION OF A MANDATORY CODE OF PRACTICE

FOR AN OCCUPATIONAL HEALTH PROGRAMME (OCCUPATIONAL HYGIENE AND MEDICAL SURVEILLANCE) FOR NOISE

DMR16/3/2/4-A3

DATE OF FIRST ISSUE: 1 MARCH 2003

OCCUPATIONAL MEDICAL SURVEILLANCE PROGRAMME

- ▶ 2003 Guideline
- ▶ Revision 2011 TO 2013
- ▶ Current Revision (Commenced work at the MHSC in the latter part of 2017)

2003 GUIDELINE HIGHLIGHTS

- ▶ The baseline audiogram done on an employee entering the mining industry for the first time will be the baseline for the rest of his/her working career
- ▶ Exit audiogram may be used as the initial audiogram at a new mine, if it was done less than six months before commencing work at the new mine, but it does not replace the instruction 171 baseline audiogram

2003 GUIDELINE HIGHLIGHTS

- ▶ Periodic audiogram should be done at least annually for employees subject to medical surveillance
- ▶ When employees are exposed to noise levels ≥ 105 dB, a monitoring audiogram may be done.
- ▶ This monitoring audiogram is recorded immediately after completing a shift to determine whether a temporary threshold shift has occurred and to monitor the effectiveness of the hearing conservation programme

2003 GUIDELINE HIGHLIGHTS

- ▶ An exit audiogram is recorded for any employee leaving employment or one who is permanently transferred to a work area in which medical surveillance is not required
- ▶ Hygiene measurements should be linked to each employee's record of medical surveillance

2013 REVISION HIGHLIGHTS

- ▶ Audiometry is done in accordance with SANS 10083
- ▶ **Revised baseline audiogram**- an annual audiogram must be deemed to be a revised baseline audiogram when, in the judgment of the OMP:
 - The hearing threshold in the annual audiogram indicates significant improvement over the baseline audiogram
 - The employee has been compensated for NIHL, in which case a new baseline has to be established

2013 REVISION HIGHLIGHTS

- ▶ Referral threshold shift (RTS) to be used for the purpose of evaluating the efficacy of the hearing conservation programme
- ▶ A RTS occurs when there is an increase of 15dB from the baseline at any frequency
- ▶ Is a reportable incident and an indicator for further investigations like referral for diagnostic audiogram, employee training about the hearing conservation programme, inspection of the HPD of the employee
- ▶ This concept was from SANS 10083:2004 and removed from subsequent updates to SANS 10083

2013 REVISION HIGHLIGHTS

- ▶ Periodic audiogram is conducted annually for employees with noise exposure levels ≥ 85 dB
- ▶ Conducted every six months for employees with noise exposure ≥ 105 dB until it is established that no RTS is evident. Thereafter the tests may be done annually

2019 GUIDELINE

OBJECTIVE

- ▶ To assist in protecting the health of employees at the mine by monitoring and reducing their exposure to noise
- ▶ Standard threshold shift included to proactively manage the risk of noise exposure

PLH SHIFT \geq 5% / EARLY NOISE INDUCED HEARING LOSS

- ▶ PLH shift of \geq 5% was declared a reportable occupational disease in a government gazette on 11 February 2011 and has not been repealed
- ▶ It is therefore included in the current revision of the guideline

2019 GUIDELINE

OCCUPATIONAL MEDICAL SURVEILLANCE PROGRAMME

- ▶ Sections 13(2) (c) and 17 of the MHSa - medical surveillance consists of an initial medical examination, periodic examinations, and an exit medical examination
- ▶ Regulation 11.4(2) of the MHSa - medical surveillance in respect of noise must consist of a baseline audiogram, periodic audiograms, an exit audiogram, and any additional medical surveillance required in terms of the employer's risk assessment

AUDIOMETRY

- ▶ Audiometric testing in the absence of appropriate control measures cannot reduce the risk of NIHL and should not be regarded as a solution to the noise hazard, but as a means of identifying and prioritising problem areas to enable the formulation of appropriate interventions
- ▶ Audiometric Testing should comply with SANS 10083

AUDIOMETRIC SCREENING PROCEDURES

- ▶ Otoscopic examination should be done before testing
- ▶ It must be confirmed that the employee was not exposed to noise levels $\geq 85\text{dB}$ for at least 16 hours prior to the test
- ▶ Audiometric tests should be done at no cost to the employee

BASELINE AUDIOGRAM

- ▶ Established using screening audiometry
- ▶ Refer to an audiologist for diagnostic audiograms if there is an abnormality
- ▶ Baseline audiograms should be used to:
 - Determine future compensable hearing loss
 - Determine the hearing status of an employee

BASELINE AUDIOGRAM AND STS BASELINE

- ▶ For novices to the mining industry, the Instruction 171 baseline audiograms may serve as the STS baseline audiograms
- ▶ For existing employees, the STS baseline audiograms would have been completed by December 2017, as per the DMR Guidance Note for the implementation of STS in the medical surveillance of noise induced hearing loss and would differ from the Instruction 171 baseline audiograms

BASELINE AUDIOGRAM AND STS BASELINE

- ▶ Persons previously employed in the mining industry who had been unemployed during the STS baseline period would need an STS baseline done upon return to the mining industry

REVISED BASELINE AUDIOGRAM

A periodic audiogram must be deemed to be a revised baseline audiogram when:

- The employee has been compensated for NIHL, in which case the compensation audiogram becomes the new baseline
- There is an average change in hearing of 25dB or more, at the frequencies of 2000Hz, 3000Hz and 4000 Hz in one or both ears, as compared to the employee's STS baseline audiogram

(The diagnostic audiogram that confirms the average change in hearing of 25dB, becomes the new STS baseline)

PERIODIC AUDIOGRAM

- ▶ Done annually when the noise exposure is $\geq 85\text{dB}$
- ▶ Done six monthly when the noise exposure is $\geq 105\text{dB}$

PURPOSE OF THE PERIODIC AUDIOGRAM

- ▶ Determine the occurrence and extent of any standard threshold shifts
- ▶ Determine whether a PLH shift of 10% has occurred for compensable hearing loss
- ▶ Determine whether the PLH shift of 5% has occurred for early noise induced hearing loss

INVESTIGATIONS

Done when the periodic audiogram indicates:

- ❖ Early noise induced hearing loss (intervals of a PLH ≥ 5) or
- ❖ STS ≥ 25 dB or
- ❖ Compensable hearing loss (intervals of PLH ≥ 10)

INVESTIGATIONS

This may include:

- ▶ investigating the reason for the shift (re-testing including otoscopic examinations; confirming that the employee was away from noise for a minimum of 16 hours)
- ▶ where necessary referral for diagnostic audiology
- ▶ the employee shall be referred to an OMP or ENT Specialist as appropriate

SECTION 11.5 INVESTIGATION

- ▶ Done when the diagnostic audiogram has confirmed the PLH or STS shifts and work relatedness has been proven

SECTION 11.5 INVESTIGATION

Should include the following interventions:

- ▶ Retraining of employees regarding the hearing conservation programme and the use of hearing protectors
- ▶ The hearing protection equipment which was used by the employee, should be carefully inspected for possible shortcomings or inadequacies; if necessary the employee may be refitted with alternative hearing protectors before being allowed to re-enter the noise zone
- ▶ Necessary steps should be taken to prevent a possible further STS or PLH shift
- ▶ Inspection of noise sources at the work place of the employee

PERIODIC AUDIOGRAM

- ▶ The employer should report all cases of confirmed compensable noise induced hearing loss (NIHL) to the relevant authority, as per relevant legislation

EXIT AUDIOMETRY

- ▶ Principals are the same as periodic audiogram
- ▶ Section 11.5 investigation is done when the diagnostic audiogram has confirmed the PLH shift of 5 or 10% or STS shift of 25 and work relatedness has been proven
- ▶ The audiogram and the PLH derived from it shall be recorded on the individual's exit certificate

EXIT

Ensure that the employee is given a copy of the following on exit:

- ▶ the employee's exit certificate
- ▶ a copy of the employee's record of hazardous work (DMR 276)
- ▶ baseline audiometry results
- ▶ the results of the exit audiometric test

OCCUPATIONAL MEDICINE REPORTING

Health Incident reporting

- ▶ Reporting to the DMR must be done within 30 days of the diagnosis of noise induced hearing loss in the DMR 231

Annual medical reporting

- ▶ Reporting to the DMR must be done on an annual basis for all cases of compensable hearing loss in the DMR 165

LINKING TO MEDICAL SURVEILLANCE RECORDS

- ▶ This COP must describe a system in place that addresses the linkage between occupational hygiene measurements and the medical surveillance records

TRAINING AND AWARENESS OF EMPLOYEES ON HEARING CONSERVATION PROGRAMME

- ▶ The employer must, within 30 days of an employee's enrolment into a hearing conservation program, provide the employee with training
- ▶ The employer must provide training every 12 months thereafter, if the employee's noise exposure continues to equal or exceed the action level (82 dB)

TRAINING TOPICS

- ▶ The effects of noise on hearing
- ▶ The purpose and value of wearing hearing protectors
- ▶ The advantages and disadvantages of the hearing protectors to be offered
- ▶ The various types of hearing protectors offered by the employer and the care, fitting and use of each type

TRAINING

- ▶ The employer's and employee's respective responsibilities in maintaining mine noise controls
- ▶ The purpose and value of audiometric testing and a summary of the procedures.

END

